Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Communications Assistance for	)	ET Docket No. 04-295
Law Enforcement Act and	)	
Broadband Access and Services	)	RM-10865

To: The Commission

COMMENTS OF DONALD CLARK JACKSON

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COMMENTS OF DONALD CLARK JACKSON

I, Donald Clark Jackson, hereby submit my comments[1] in response to the Commission's August 4, 2004 *Notice of Proposed Rulemaking* in the above-captioned proceeding.[2]

I have been involved professionally in the communications and computer fields for twenty-four years, and am currently employed as an engineering vice president at a communications startup company that provides speech enabled interactive voice response services and applications on an outsourced basis to major telecommunications carriers. For the past fifteen years, I have actively been involved in developing new communications applications, services, and devices.

INTRODUCTION

This NPRM primarily seeks to extend and clarify the rules and regulations implementing the Communications Assistance for Law Enforcement Act (CALEA) because of changes in the communications industry resulting from the introduction of VoIP technology. Existing US telecommunications laws and regulations are based on a decades-old model of the business and technical structure of the telephone network, which VoIP technology has rendered obsolete. Creating patchwork changes to CALEA regulations without first creating a new regulatory model (or framework) for communications networks that takes into account the revolutionary changes to the structure of the US telecommunications network will fail to achieve the goals of the Commission, Law Enforcement, and Congress, as described in this NPRM.

[1] My comments are my own, and do not reflect the views of my employer, or anyone else.

[2] *Communications Assistance for Law Enforcement Act and Broadband Access and Services*, Notice of Proposed Rulemaking, ET Docket No. 04-295, August 4, 2004 ["*NPRM*"].

I. The Impact of the Internet, IP, and VoIP, on Telephony

A key difference between the Internet and the Public Switched Telephone Network (PSTN) is that the PSTN was designed for, and provides, exactly one application: telephony. Other uses to which the PSTN has been put, for example data transmission, have been accomplished by making them indistinguishable from telephony to the PSTN. In stark contrast, the Internet was designed to be a transport network independent of, and completely agnostic to, the applications and services provided over it. IP networks provide a common transport infrastructure that potentially infinitely many applications can utilize.

The development and maturation of VoIP technology enables telephony to be provided as just another application over the Internet, with comparable quality and reliability, and at a significantly lower cost than the legacy PSTN. This circumstance creates many new opportunities, and creates conflict and tension between the legacy PSTN and the Internet. Telephony is undergoing a revolutionary transformation, telephony is being re-implemented as just another application on the Internet.

When telephony is implemented as an application on the Internet, there is no need to aggregate telephony with transport. Existing telephony services (Vonage, and AT&T's CallVantage) are offered to consumers without transport of any kind. It is the consumer's responsibility to arrange for suitable broadband Internet connectivity.

This is a significant departure and change from yesteryear, when telephony, transport, and the telephone instrument itself were bundled and provided by the vertically integrated telephony monopoly of AT&T.

II. The Impact of the Internet, IP, and VoIP, on Communications

In addition to recasting telephony as just one of many IP-enabled applications, the Internet as a general purpose transport network has engendered an ever increasing number of communications applications, examples include email, Instant Messaging (with text, audio/speech, and video), chat groups, newsgroups, weblogs, etc. Millions of Americans use these applications daily to communicate for personal and business purposes, augmenting, supplementing, and even replacing telephone use. The diversity of communication applications raises serious issues for CALEA, namely:

- Which communications can be intercepted?
- How are these communications intercepted?
- Who is responsible for intercepting these communications?

III. Review of Motivation for CALEA

For many years, the PSTN was implemented with circuit switched, analog technology. Telephone calls could be intercepted anywhere along the very well defined path between a subscriber and the telephone company, or within the telephone company's premises, with very simple and inexpensive equipment, conceptually just a phone with a pair of "alligator clips" to connect to the line under surveillance. With the advent and deployment of digital switching, the old technology no longer worked, and Law Enforcement lobbied Congress to require the manufactures of communications equipment and the carriers that provided telephone service to build support for lawful intercept into telephone network. CALEA was the law passed that mandates this support from carriers and their equipment suppliers.

IV. Extending CALEA to Internet Communications

The Commission (and Law Enforcement) argues that at the time the CALEA law was passed, "local exchange telephone service" was not limited to traditional speech telephony, but was also used for dial up Internet access via modem, and thus CALEA applies to all Internet transport by an individual under surveillance. I am not a lawyer, and I am not an expert on the CALEA statutes, but unless CALEA explicitly states that it applies to IP communications, and not just "local exchange telephone service", then I strongly disagree with the Commission's interpretation, and I urge the Commission and Law Enforcement to return to Congress for an updated law that explicitly includes Internet transport and applications. It is not reasonable to assume that most members of Congress were technically aware of how dial up Internet access worked, and that they intended this communications modality to fall under CALEA.

For the remainder of my comments on this NPRM, I will assume that either that either the Commission proceeds with its stated interpretation that CALEA applies to Internet communications, or that Congress updates CALEA to so indicate.

V. Intercepting Internet Based Communications

Back when there was only one communication network, namely the PSTN, which was used primarily for voice telephony, adding support for lawful intercept into this network made technical sense. The US telephone network was mostly technically homogenous; an artifact of the old Bell System monopoly, and all the "intelligence" in the telephone network was centralized in the carrier's switches, which were manufactured by a small number of vendors (Lucent, Nortel, etc.). With a relatively few carriers (who were already heavily regulated by the government), a handful of communications equipment vendors, and a network architecture with

centralized intelligence, it was logistically straightforward to add lawful intercept to the US telephone network.

With Internet-based applications, the barriers of entry for providing communications services are drastically lowered. A service comparable to Pulver.com's Free World Dialup (FWD) could be deployed with an initial cash outlay of as little as $1000. The number of potential service and application providers will drastically increase with VoIP, and so will the vendors of equipment. As peer-to-peer communications applications gain popularity, there will in fact be no service provider at all, and no central point of intercept, and there may be no legal entity for which to mandate compliance with CALEA.

VoIP-based services and applications are, and will be, located anywhere in the world (e.g. outside the US), and will provide service to anyone on the Internet. The essential software components can be acquired free from "open source" providers/developers located outside the US. Communications services can choose to use standard VoIP protocols like SIP and RTP, or can chose to develop new private proprietary protocols, which would be unknown and undocumented to anybody else (like the Skype application uses today). What jurisdiction do US rules and regulations have over services that are hosted outside the US, and over communications software developers that do not charge for their applications, and who are also located outside the US? If the Commission subjects only US-based communications applications providers to CALEA, then they will be at a cost disadvantage to offshore competition, and the Commission has no jurisdiction to mandate compliance by offshore providers.

In the NPRM, the Commission has not provided communication application developers any guidance to determine if their service would or would not be covered by CALEA, and is in fact self-contradictory. The Commission states "Our tentative conclusion respects Congress's

understanding and does not propose attaching CALEA obligations to services or applications that "ride over" the underlying broadband transmission" but this is EXACTLY what telephony over broadband services do. What is the difference between Vonage, AT&T CallVantage, Free World Dialup, AOL Instant Messenger, or Skype? They are all applications that ride over the underlying broadband transport. Push-To-Talk (PTT) services from providers like Sprint PCS and Verizon Wireless are simply VoIP applications that use the wireless IP/Internet capabilities that those networks support; yet the Commission subjects PTT applications to CALEA obligations in a declaratory ruling included in the NPRM. There is no clear, consistent, predictable framework provided by the Commission justifying or explaining its proposals and rulings in this area.

VI. Proposed Lawful Intercept Approach

My proposal for lawful intercept is as follows: If the Commission concludes that Congress has already included Internet transport in CALEA, or if Congress subsequently explicitly includes Internet transport under CALEA, then Internet/IP transport providers should provide copies of IP packets sent to, or transmitted from, subjects under surveillance (authorized by a court order). Today's practice of making communications equipment vendors incorporate application specific interception capability is futile. The rate of introduction of new services and applications, often on a peer-to-peer basis provides no consistent location or format for interception, and the time lag between service introduction and CALEA compliance will offer a long window for surveillance-free communications for those that seek this. Government agencies like the National Security Agency are widely understood to have developed the capability to decode communications in any number of formats, and the government should similarly develop the ability to decode Internet based communications. This will enable the

government to intercept any form of communications, including peer-to-peer communications not currently proposed to have CALEA obligations. My proposal answers the questions VoIP technologies raises for CALEA in this way:

- Which communications can be intercepted?
    - All IP communications
- How are these communications intercepted?
    - By intercepting all IP packets from/to a suspect under surveillance, sent to Law Enforcement, and decoded into specific conversations/streams/messages by Law Enforcement.
- Who is responsible for intercepting these communications?
    - The surveillance suspect's Internet/IP transport provider.

Respectfully submitted,

DONALD CLARK JACKSON

November 8, 2004